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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/673,360	10/16/2000	Toshihiko Oba	KOI-046	6711

7590 12/19/2002

Rader Fishman & Grauer
1233 20th Street NW Suite 501
Washington, DC 20036

EXAMINER

NOLAN, DANIEL A

ART UNIT	PAPER NUMBER
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2655

DATE MAILED: 12/19/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/673,360

Applicant(s)

OBA, TOSHIHIKO

Examiner

Daniel A. Nolan

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 16 October 2000 and 08 August 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,2,4,6,7,14-29 and 31-34 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,2,4,6,7,14-24,28,29 and 31-34 is/are rejected.
- 7) ☒ Claim(s) 25-27 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 10 August 2000 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 3.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

(Note that as of October 1, 2002 a new **Art Unit 2655** was established that includes this application, and that this new AU number should be used in all future correspondence.)

Response to Amendment

1. The initial application of 16 October 2000 and the preliminary amendment filed 09 August 2001 contained the following problems:

- Some (but not all) of the original claims in the application of 16 October 2000 were marked (*Amended*), (*Added*) and (*Deleted*). The Examiner is proceeding with the understanding that the claims were copied from a response for a prior application without being checked.
- The amendment filed 09 August 2001 included a change to claim 10. Claim 10 had been cancelled in the initial application. The Examiner is proceeding with the understanding that the change was inadvertently included and should not be applied.

2. A substitute specification including the claims is required pursuant to 37 CFR 1.125(a) because the confusion produced by submitting amendment language with an initial application, combined with conflicting amendments produce a situation that cannot be corrected by further amendment, but can only resolved by total replacement.

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A substitute specification filed under 37 CFR 1.125(a) must only contain subject matter from the original specification and any previously entered amendment under 37 CFR 1.121. If the substitute specification contains additional subject matter not of record, the substitute specification must be filed under 37 CFR 1.125(b) and must be accompanied by: 1) a statement that the substitute specification contains no new matter; and 2) a marked-up copy showing the amendments to be made via the substitute specification relative to the specification at the time the substitute specification is filed.

Information Disclosure Statement

3. The listing of references in the specification (at the end of page 1, in the mid-pages of 17 & 18, from the top of page 25 to page 23, end page 37 and etc. throughout the application) is not a proper information disclosure statement. 37 CFR 1.98(b) requires a list of all patents, publications, or other information submitted for consideration by the Office, and MPEP § 609 A(1) states, "the list may not be incorporated into the specification but must be submitted in a separate paper." Therefore, unless the references have been cited by the examiner on form PTO-892, they have not been considered.

Specification

4. The specification is objected to as failing to provide proper antecedent basis for the claimed subject matter. See 37 CFR 1.75(d)(1) and MPEP § 608.01(o). Correction of the following is required:

- Claims 14 and 19 indicate the limitation of *detachable output*, that is not otherwise mentioned in the disclosure.

The Examiner is proceeding with the understanding that the assembled components are not integral and not interdependent, and so are capable of stand-alone operation.

- Claims 20-22 include the limitation of *external equipment* that is not otherwise mentioned in the disclosure.

The Examiner is proceeding with the understanding that the reference is made to designate origin from devices that are not considered part of the immediate application assembled components are not integral and not interdependent, and so are capable of stand-alone operation.

5. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

The following title is suggested:

“Speech Transformation for Assistive Technology and Prosthesis.”

6. The lengthy specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification, such as:

- The heading "Disclosure" should be "Summary" (mid-page 3).
- Acronyms should be defined at the 1st appearance, such as "Lip-EMG" and "CISTA" (mid-page 2), "NTT" (mid-page 7).
- "Focusing" as used is misspelled (3rd line of page 5 of the amendment beginning page 47, line 14).
- "tracheoesophageal" as used is misspelled (8th line from end of page 2) – or requires the complete nomenclature, as *Tracheophageal fistula hypospadias*.
- "Resultantly" is misspelled (4th line from end page 10).

7. The use of the trademarks such as Whisper™ (mid-page 20), IRIDIUM™ (mid-page 21), etc. has been noted in this application. Trademarks should be capitalized wherever they appear and be accompanied by the generic terminology.

Although the use of trademarks is permissible in patent applications, the proprietary nature of the marks should be respected and every effort made to prevent their use in any manner which might adversely affect their validity as trademarks.

Claim Rejections - 35 USC § 112

8. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

9. Claims 20-22 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

10. Claims 20-22 recites the limitation "*communication*" in the 2nd lines (of each claim). There is insufficient antecedent basis for this limitation in the claim.

The Examiner is proceeding with the understanding that the claims were intended to depend from claim 15.

Claim Rejections - 35 USC § 103

11. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

12. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of

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the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Visser & Tanaka et al

13. Claims 1 and 28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Visser (U.S. Patent 4,545,065 A) in view of Tanaka et al (Japan Patent 05-083763).

14. Regarding claims 1 and 28, both as understood by the Examiner, the coding signal processing method and apparatus of Visser applies to the immediate application as follows:

- Visser (column 7 lines 15-20) reads on the feature of *acousto-electric transducing means for detecting the speech to generate speech signals*;
- Visser (column 7 lines 3-6) indicates that his invention is suited for *recognition* but does not further disclose such an application. Tanaka et al (section [0034] line 2) reads on the feature of *recognition means for performing speech recognition processing using the speech signals from the acousto-electric transducing means and the feature of transforming means for working on and transforming the result of recognition depending on the using objectives*.

It would have been obvious to a person of ordinary skill in the art of speech signal processing at the time of the invention to apply the method/teachings of Tanaka et al to the device/method of Visser so as to transform the spoken command to action.

- Visser (66-68 figure 3A) reads on the feature of *output control means for generating a control signal for outputting the result recognized by recognition means and/or the result of recognition obtained on working and transformation operations* but does not mention changing the display to indicate the success of the operation.
- Tanaka et al (section [0034] lines 3-4) reads on the features of having *output means for outputting the result of recognition recognized and worked on and transformed, based on said control signal to present the result of recognition to the user (on a) display means for demonstrating an image or electro-acoustic transducing means for outputting speech;*

Tanaka et al (section [0035] lines 1-2) reads on the feature that *output control means generates a control signal so that the result of recognition worked on and transformed and/or the result of recognition not worked on or transformed is demonstrated as an image on display means of said output means, and generates a control signal for outputting from said electro-acoustic transducing means the result of recognition and/or the result of recognition worked on and transformed as speech.*

It would have been obvious to a person of ordinary skill in the art of speech signal processing at the time of the invention to apply the method/teachings of Tanaka et al to the device/method of Visser to indicate to the operator that the specified action had taken place (or not).

Visser, Tanaka et al & Maekawa et al⁴²⁰

15. Claims 2 and 29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Visser in view of Tanaka et al and further in view of Maekawa et al⁴²⁰ (U.S. Patent 6,471,420).

16. Regarding claims 2 as understood by the Examiner and 29; the claims are set forth with the same limits as claims 1 and 28, respectively.

- While the coding signal processing method and apparatus of both Visser and Tanaka et al provide for *speech output*, Visser (column 1 lines 52-61) reads on the feature that *speech information representing the speech outputted using speech data generated on pre-sampling based on the result of recognition is generated*.
- Visser makes no mention of compensation for *voice and speech disorder*. Maekawa et al⁴²⁰ (column 6 line 13) reads on the features that *acousto-electric transducing means generates the speech uttered with voice and speech disorder* and (in claim 3) reads on the features *to generate speech signals* (claims 2 & 28) and that *the speech is recognized based on speech signals* (claim 28).

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- It would have been obvious to a person of ordinary skill in the art of speech signal processing at the time of the invention to apply the method/teachings of Maekawa et al to the device/method of Visser so as to produce activity that is based on word recognition.
- Visser (column 7 lines 3-6) reads on the feature that *transforming means includes speech recognition means for performing processing for speech recognition based on speech signals from said acousto-electric transducing means*, but does not mention means for storage.
- Maekawa et al⁴²⁰ (column 3 line 29) reads on the feature of a *storage means for memorizing speech data generated on previously sampling the speech uttered without voice-speech disorders and (in column 3 line 35), speech information generating means for generating the speech information indicating the output speech, using the speech data memorized in said storage means, based on the result of recognition which would have made it obvious to a person of ordinary skill in the art of speech signal processing at the time of the invention to apply the method/teachings of Maekawa et al⁴²⁰ to the device/method of Visser so as to remove the constraint of processing in real time and to permit adjustment of speech characteristics to improve speech clarity.*

Visser & Tanaka et al

17. Claims 4, 6-7 and 14-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Visser in view of Tanaka et al.

18. Regarding claim 4 as understood by the Examiner, the claim is set forth with the same limits as claim 1.

- Where Visser does not mention *memory*, Tanaka et al (31 & 24 in drawing 3) reads on the feature of *data storage means having stored data indicating a pattern for demonstration on display means* (i.e., drawing 4), and
- Tanaka et al (section [0034] lines 3-4) reads on the feature that *manages the control, based on the result recognized by the recognition means and/or the result of recognition obtained on working on or transforming the recognized result by transforming means, for reading out data stored in said data storage means to demonstrate the pattern indicated on the display means* disclosed in (section [0035] lines 1-2).
- It would have been obvious to a person of ordinary skill in the art of speech signal processing at the time of the invention to apply the method/teachings of Tanaka et al to the device/method of Visser so as to preserve and so permit the images to be viewed at length.

19. Regarding claim 6 as understood by the Examiner, the claim is set forth with the same limits as claim 1.

- Visser does not mention *image display*. Tanaka et al (section [0035] lines 1-2) read on the feature that *generates a control signal so that an image will be demonstrated on said display means for the speech uttered by a user and/or a*

person other than the user which would have made it obvious to a person of ordinary skill in the art of speech signal processing at the time of the invention to apply the method/teachings of Tanaka et al to the device/method of Visser so as to always indicate the present state of a device.

- Visser (column 1 lines 6 & 7) reads on the feature of *output control means amplifying the sound pressure level of the speech uttered by the user and/or a person other than the user for outputting the sound as speech from said electro-acoustic transducing means.*

20. Regarding claim 7 as understood by the Examiner, the claim is set forth with the same limits as claim 1.

- Visser does not mention image display.
- Tanaka et al (section [0035] lines 1-2) read on the feature that generates a control signal, responsive to the result of recognition, for demonstrating the meaning and the contents of the speech detected by said acousto-electric transducing means.
- It would have been obvious to a person of ordinary skill in the art of speech signal processing at the time of the invention to apply the method/teachings of Tanaka et al to the device/method of Visser so as to facilitate learning to operate Assistive technology by using known symbols and words.

21. Regarding claim 14 as understood by the Examiner, the claim is set forth with the same limits as claim 1. Visser (item 24 and the outputs in each of figures 1A-C) reads on the feature that the *output means is detachable with respect to the user*.

22. Regarding claim 15, the claim is set forth with the same limits as claim 1.

- Visser does not mention a *communication network*. Tanaka et al (section [0008] lines 8-9 and section [0015] line 1) read on the feature that *speech is fed through a communication network to said acousto-electric transducing means*
- Tanaka et al (connecting *network trunk* \leftrightarrow 25 in Drawing 3 – bi-directional data flow & section [0026] line 9) reads on the feature that *communication means outputs the result of recognition from said output means to said communication network*.
- It would have been obvious to a person of ordinary skill in the art of speech signal processing at the time of the invention to apply the method/teachings of Tanaka et al to the device/method of Visser so as to enable operation (and receive confirmation) while an occupant is away.

Visser, Tanaka et al, Maekawa et al^{'420} & Maekawa et al^{'257}

23. Claim 16 is rejected under 35 U.S.C. 103(a) as being unpatentable over Visser in view of Tanaka et al and further in view of Maekawa et al^{'420} and further in view of Maekawa et al^{'257} (U.S. Patent 5,884,257).

24. Regarding claim 16, the claim is set forth with the same limits as claim 2.
- Visser does not mention a *communication network*. Maekawa et al²⁵⁷ (column 10 lines 42-45) reads on the feature that *performs speaker recognition processing on the input speech to generate the result of recognition associated with each speaker; and wherein said output means presents the information pertinent to each speaker to the user.*
 - It would have been obvious to a person of ordinary skill in the art of speech signal processing at the time of the invention to apply the method/teachings of Maekawa et al²⁵⁷ to the device/method of Visser to avoid confusion in a dialogue between speakers.

Visser, Tanaka et al, Maekawa et al⁴²⁰ & Yamakita

25. Claims 17 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Visser in view of Tanaka et al and further in view of Maekawa et al⁴²⁰ and further in view of Yamakita (U.S. Patent 5,956,681).

26. Regarding claim 17 as understood by the Examiner, the claim is set forth with the same limits as claim 2.

- Visser does not mention a *camera*. Yamakita (202 in figure 2) reads on the feature of an *imaging means for photographing an image;*
- Yamakita (405 → 407 → 404 in figure 4) reads on the feature of *imaging means outputting the photographed image at least to display means.*

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- It would have been obvious to a person of ordinary skill in the art of speech signal processing at the time of the invention to apply the method/teachings of Yamakita to the device/method of Visser so as to construct icons from actual objects, rather than incur the time and risk of finding a matching object image in a pre-existing album.

27. Regarding claim 19 as understood by the Examiner, the claim is set forth with the same limits as claim 17. Visser (24 and the outputs of figures 1A-C) reads on the feature that the *output means is detachable with respect to the user*.

Visser, Tanaka et al, Maekawa et al⁴²⁰, Yamakita & Tzirkel-Hancock

28. Claim 18 is rejected under 35 U.S.C. 103(a) as being unpatentable over Visser in view of Yamakita and further in view of Maekawa et al⁴²⁰ and further in view of Yamakita and further in view of Tzirkel-Hancock (U.S. Patent 6,133,904).

29. Regarding claim 18 as understood by the Examiner, the claim is set forth with the same limits as claim 17.

- Where neither Visser nor the other prior art of record address the issue of performing image transforming on photographs, Tzirkel-Hancock (column 34 lines 17-35) reads on the feature of an *image transforming processing on the photographed image depending on the using objectives to output the transformed image*.

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- It would have made it obvious to a person of ordinary skill in the art of speech signal processing at the time of the invention to apply the method/teachings of Tzirkel-Hancock to the device/method of Visser so as to have the image size or contrast enhanced to improve visibility of details.

Visser & Tanaka et al

30. Claims 20-23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Visser in view of Tanaka et al.

31. Regarding claim 20 as understood by the Examiner, the claim is set forth with the same limits as claim 15.

- Visser does not mention a *communication network*, as Tanaka et al does (in section [0008] line 8) which necessarily reads on the feature that the *communication means is connected to an external equipment contained in an external network; and* (in section [0008] line 8), which reads on the feature that *data from an external equipment is outputted as result of recognition*.
- It would have been obvious to a person of ordinary skill in the art of speech signal processing at the time of the invention to apply the method/teachings of Tanaka et al to the device/method of Visser so as to allow the user to move without freely independently of the apparatus.

32. Regarding claim 21 as understood by the Examiner, the claim is set forth with the same limits as claim 20.

- Visser does not mention a *communication network*. Tanaka et al (Items 60 → 63 in Drawing 7) read on the feature that *outputs speech signals, generated by said acousto-electric transducing means, the result of recognition obtained by said recognition means and/or the result of recognition as worked on and transformed by transforming means to an external equipment to obtain the result of recognition and/or the result of recognition as worked and transformed from said external equipment*.
- It would have been obvious to a person of ordinary skill in the art of speech signal processing at the time of the invention to apply the method/teachings of Tanaka et al to the device/method of Visser to enable remote operation of devices.

33. Regarding claim 22 as understood by the Examiner, the claim is set forth with the same limits as claim 20.

- Visser does not mention a *communication network*. Tanaka et al (Items 63 ← 60 in Drawing 7) read on the feature that the *communication means receives a program adapted for changing the processing contents of said recognition means and/or said working and transformation means from an external equipment while* (section [0039] lines 10-13) reads on the feature that *generates the result of*

recognition and/or the results of working and transformation operations based on program received by communication.

- It would have been obvious to a person of ordinary skill in the art of speech signal processing at the time of the invention to apply the method/teachings of Tanaka et al to the device/method of Visser to enable remote operation of devices.

34. Regarding claim 23, the claim is set forth with the same limits as claim 1.

Visser (item 133 → *amp* in figure 6) reads on the feature of *control to output the result of recognition and/or the transformed result of recognition simultaneously or with a time difference* by being not specific, so applying to either in the alternative.

Visser, Tanaka et al & Maekawa et al⁴²⁰

35. Claim 24 is rejected under 35 U.S.C. 103(a) as being unpatentable over Visser in view of Tanaka et al and further in view of Maekawa et al⁴²⁰.

36. Regarding claim 24 as understood by the Examiner, the claim is set forth with the same limits as claim 1.

- Visser does not mention radio where Tanaka et al (section [0024] with reference to *telephone, microphone & camera*) reads on the feature that *acousto-electric transducing means, recognition means, transforming means, output control*

means and the output means are designed as respective plural devices, depending on the using objectives.

- Maekawa et al^{'420} (items 164 \leftrightarrow 7 in figure 34) illustrates the feature that *the respective devices are interconnected over a radio route to transmit/receive at least the result of recognition and/or the transformed result of recognition.*
- It would have been obvious to a person of ordinary skill in the art of speech signal processing at the time of the invention to apply the method/teachings of Maekawa et al^{'420} to the device/method of Visser so as to avoid limiting the position of or otherwise restraining the activated appliance.

Visser & Tanaka et al

37. Claim 31 is rejected under 35 U.S.C. 103(a) as being unpatentable over Visser in view of Tanaka et al.

38. Regarding claim 31 as understood by the Examiner, the claim is set forth with the same limits as claim 1. Visser does not mention *demonstrating the result of recognition as an image*.

- Tanaka et al (section [0034] lines 3-4) reads on the feature of a *first transforming means for performing working and transformation operations to demonstrate the result of recognition as an image* and, in (section [0026] line 8), reads on the feature of a *second transforming means for performing working and transformation operations to output the result of recognition as speech*.
- It would have been obvious to a person of ordinary skill in the art of speech signal processing at the time of the invention to apply the method/teachings of

Tanaka et al to the device/method of Visser to verify that the action met expectations.

Visser, Tanaka et al & Cox et al

39. Claim 32 is rejected under 35 U.S.C. 103(a) as being unpatentable over Visser in view of Tanaka et al and further in view of Cox et al (U.S. Patent 6,154,723).

40. Regarding claim 32 as understood by the Examiner, the claim is set forth with the same limits as claim 1.

- Visser does not mention a *Virtual Reality*. Cox et al (claim 1 lines 56-57) reads on the feature for *a sensor for sensing the user's movement* and, (in claim 1 lines 45-54), reads on the feature that *output means forms a VR (virtual reality) based on the information as detected by said sensor and the result of recognition worked on and transformed by said transforming means*.
- It would have been obvious to a person of ordinary skill in the art of speech signal processing at the time of the invention to apply the method/teachings of Cox et al to the device/method of Visser so as to provide multiple items of information in a single output.

Visser, Tanaka et al & Tzirkel-Hancock

41. Claim 33 is rejected under 35 U.S.C. 103(a) as being unpatentable over Visser in view of Tanaka et al and further in view of Tzirkel-Hancock.

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42. Regarding claim 33 as understood by the Examiner, the claim is set forth with the same limits as claim 1.

- Visser does not mention *Augmented Reality*. Tzirkel-Hancock (1st line of claim 21) reads on the feature of *a sensor for sensing the user's movement* and, in (273-277 in figure 36 and figures 37 & 38), reads on the feature that *output means forms an AR (augmented reality) based on the information as detected by said sensor and the result of recognition worked on and transformed*.
- It would have been obvious to a person of ordinary skill in the art of speech signal processing at the time of the invention to apply the method/teachings of Tzirkel-Hancock to the device/method of Visser so as to present more detail than would ordinarily be apparent to the unaided senses.

Visser, Tanaka et al & Maekawa et al⁴²⁰

43. Claim 34 is rejected under 35 U.S.C. 103(a) as being unpatentable over Visser in view of Tanaka et al and further in view of Maekawa et al⁴²⁰.

44. Regarding claim 34 as understood by the Examiner, the claim is set forth with the same limits as claim 1.

- Visser does not mention *a dialogue*. Maekawa et al⁴²⁰ (column 3 lines 63-64) reads on the features of *a speech dialogue function* and that the *transforming means works on and transforms the result recognized by said recognition means*

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based on the result of the dialogue in said speech dialogue function with the disclosure of speech apparatus' in conversation with one another.

- It would have been obvious to a person of ordinary skill in the art of speech signal processing at the time of the invention to apply the method/teachings of Maekawa et al to the device/method of Visser so as to provide a *macro-like* capability that allows unattended operation of common or repetitive tasks.

Allowable Subject Matter

45. Claims 25-27 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

46. The following is an examiner's statement of reasons for allowance:

- The present invention is directed to *speech recognition and synthesis*.
- Claim 25 identifies the uniquely distinct feature that detects the speech uttered using auxiliary means or devices and using speech production substitutes. The closest prior art, Maekawa et al, discloses that compensation can be made for *voice disorders* in ordinary speech, while conventional art (such as MacLeod³²⁶) is oriented toward reshaping speech disorders so as not to be detectable and consequently the prior art of record fails to anticipate or render the above underlined limitations obvious.

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- Claims 26 and 27 depend on claims that have been found allowable and so are they themselves allowable as a consequence.

47. Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

48. As allowable subject matter has been indicated, applicant's reply must either comply with all formal requirements or specifically traverse each requirement not complied with. See 37 CFR 1.111(b) and MPEP § 707.07(a).

Conclusion

49. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

- Jiang et al ("Voice-Activated Environmental Control System for Persons with Disabilities", Proceedings of the IEEE 26th Annual Northeast Bioengineering Conference, April 2000, Pages: 167 -168.)
- Valles et al ("Multimodal Environmental Control System For Elderly And Disabled People", Bridging Disciplines for Biomedicine, 18th Annual International Conference of the IEEE, Engineering in Medicine and Biology Society, pages

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516 - 517 vol.2, November 1996) simplifies acclimation to improve the probability that a person with diminished capacity will be able to employ Assistive technology.

- Douglas (U.S. Patent 5,812,977 A) Voice control computer interface enabling implementation of common subroutines.
- HAL2000 ("News from HAL", Home Automated Living & provenance documents, Smarthome USA, April 1997 – July 1998) is a commercially available voice-responsive controller for electrical devices. The setup screen presents images of the objects (lamps, TVs, heaters, etc) being turned on/off at recognition of spoken commands – either through microphone or telephone – and provides visual display of effect and audio feedback, prompting and verification.
- Smartlinc ("Plato Houselinc® Interface Version 3.01", © 1992, 1997 by Tom Gillespie) is a commercially available X-10™ and IR remotely activated controller with screen icons representing devices that both control their operation and reflect the status in accordance with the corresponding features of the immediate invention. It has been combined with voice recognition control software (Dragon™, Voice Assist™, etc.) for use by individuals with disabilities to control their environments.
- Seidl ("Lighthouse™ for Windows®", © 1993 Seidl Computer Engineering Inc.) is a commercially available X-10™ controller for devices operating in accordance with the features of the corresponding claims. It has been combined with voice

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recognition control software (Dragon™, VoiceAssist™, etc.) for use by individuals with disabilities to control their environments.

- Jenkins et al (U.S. Patent 6,159,014) provides visual and audible feedback in accord with the features transforming spoken words into images and synthesized speech.
- Hoffert et al (U.S. Patent 5,983,176) receives, transforms & augments A/V elements.
- MacLeod³²⁶ (U.S. Patent 4,821,326) produces speech synthetically as compensation for hearing impairments.
- Baumgartner et al (U.S. Patent 6,463,412) produces speech synthetically as compensation for speaking impairments.

50. Any inquiry concerning this communication or earlier communications from the Examiner should be directed to Daniel A. Nolan at telephone (703) 305-1368 whose normal business hours are Mon, Tue, Thu & Fri, from 7 AM to 5 PM.

If attempts to contact the examiner by telephone are unsuccessful, the examiner's supervisor, Doris To, can be reached at (703) 305-4827.

The fax phone number for Technology Center 2600 is (703) 872-9314. Label informal and draft communications as "DRAFT" or "PROPOSED", & designate formal communications as "EXPEDITED PROCEDURE".

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Formal response to this action may be faxed according to the above instructions,

or mailed to: Commissioner of Patents and Trademarks
Washington, D.C. 20231

or hand-delivered to: Crystal Park 2,
2121 Crystal Drive, Arlington, VA,
Sixth Floor (Receptionist).

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to Technology Center 2600 Customer Service Office at telephone number (703) 306-0377.

Daniel A. Nolan
Examiner
Art Unit 2654

dan

December 12, 2002

A handwritten signature in black ink, appearing to read 'Daniel A. Nolan', with a large, stylized initial 'D' and 'N'.

DANIEL NOLAN
PATENT EXAMINER